Manistee River Watershed Survey (2014)

The Department of Environmental Quality (DEQ) has Aquatic Biologists that sample aquatic macroinvertebrates in the water, along with their habitat, to determine the health of our rivers and streams. **Aquatic macroinvertebrates are insects and other small organisms without backbones that live in our streams and rivers and are excellent indicators of water body health** because many live in the water all year. In addition, some macroinvertebrates are more tolerant to pollution than others. In general, healthy streams have a wider variety of macroinvertebrates than waters that are polluted.

"A watershed is all of the land that drains into a river, lake or stream."

The DEQ is responsible for ensuring our waters meet water quality standards, safe for swimming, fishing, boating, agricultural and industrial uses, and protects aquatic life and wildlife communities. The DEQ collects samples, including macroinvertebrates, from Michigan waters to identify areas that need special attention.

Additional information can be found on the DEQ's Assessment of Michigan Waters website at: www.Michigan.gov/waterquality

MDEQ employee sampling a Michigan stream

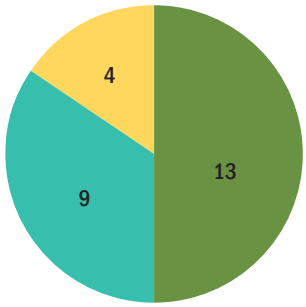
Routine sampling of the Manistee River occurs every five years to evaluate stream condition or health. Sampling occurred in 2004, 2009, and 2014 and will occur again in 2019. Overall aquatic macroinvertebrate community and habitat condition for sites sampled in 2014, are shown in the graphs to the right. A map on the last page depicts macroinvertebrate condition at specific stream locations.

Overall, the aquatic macroinvertebrate community was scored excellent or at the high end of acceptable and stream habitat (including habitat in the stream and along the edge) was rated excellent, or good (see pie charts). In addition, two stations in the Manistee River and two stations in tributaries to the Manistee scored at the lower end of acceptable. Specific causes for these lower scores were not determined.

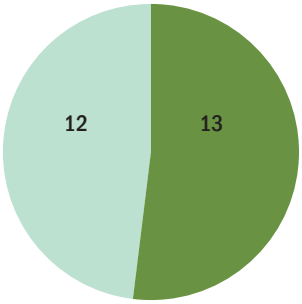
Aquatic Bug and Habitat Health at 26 stations in the Manistee River Watershed

(2014)

Aquatic Bug Community



Habitat Rating



*one station does not include a habitat score

- Excellent
- High Acceptable
- Good
- Marginal
- Low Acceptable
- Poor

Watershed Land Use

Watershed	Wetlands	Forested	Developed	Cultivated Agriculture	Hay or Pasture	Water	Other
North Branch Manistee River-Manistee River	13%	55%	6%	2%	<1%	2%	22%
Silver Creek-Manistee River	13%	50%	6%	8%	2%	1%	20%
Peterson Creek-Manistee River	6%	60%	5%	10%	3%	1%	14%
Pine River	14%	61%	9%	3%	1%	3%	10%
Bear Creek	18%	40%	6%	12%	2%	2%	20%
Little Manistee River	9%	67%	5%	3%	1%	1%	14%
Lower Manistee River	14%	61%	9%	3%	1%	3%	10%

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12/2016

Manistee River (T. Lipsey MDEQ)

Land Use

The use of the land in the watershed that drains to waterbodies greatly influences the types of pollution that can enter the water. The Manistee River watershed is dominated by natural land cover, which includes wetlands, forests, shrubs, and other vegetated areas. Cultivated land ranges from 2-12% of the total land area, with the highest percentage being in Bear Creek and the lowest percentages being in the North Branch of the Manistee River. Developed land area is 6% on average.

Water Quality Data

Water chemistry data have been collected as part of the DEQ Water Quality Monitoring Program (*www.michigan.gov/waterquality*) and to a limited degree with biological surveys (*The link provided was broken and has been removed*). In general, nutrients and metals are at levels that would be expected in a northern Michigan river system.

Fish Consumption Data

Bear Lake, Big Twin Lake, Manistee Lake (Kalkaska County), Fife Lake (Grand Traverse County), the Manistee River (upstream of Tippy Dam), Pine Lake, and Portage Lake (Manistee County), as well as other water bodies, have fish consumption advisories due to mercury and PCB levels in fish tissue. The Eat Safe Fish link has more information. The DEQ is not responsible for fish stocking, please see the Michigan Department of Natural Resources for more information *(www.michigandnr. com/fishstock/)*. **Fish Consumption Advisory Details: *www.michigan.gov/eatsafefish***

Beach Monitoring Data

Public beaches in this watershed (including those on rivers or lakes) may at times be closed due to elevated levels of bacteria; especially after rain. **Although this is rare, beach closing information is available online through BeachCast: (link broken, removed)**

Watershed groups and Lake Associations

Greater Bear Watershed: *greaterbearwatershed.com*

Little Manistee Watershed Conservation Council: *lmwcc.org*

Manistee County Conservation District: *manisteecd2.org*

Upper Manistee River Association

Au Sable Institute of Environmental Studies (Upper Manistee Volunteer Monitoring): *ausable.org*

Little River Band of Ottawa Indians

Sampling Requests

If you have a water body that you would like the DEQ to consider sampling, you can fill out a Monitoring Request Form (*www.michigan.gov/waterquality*). Requests are reviewed annually and completed based on staff availability, budget, and other monitoring needs.

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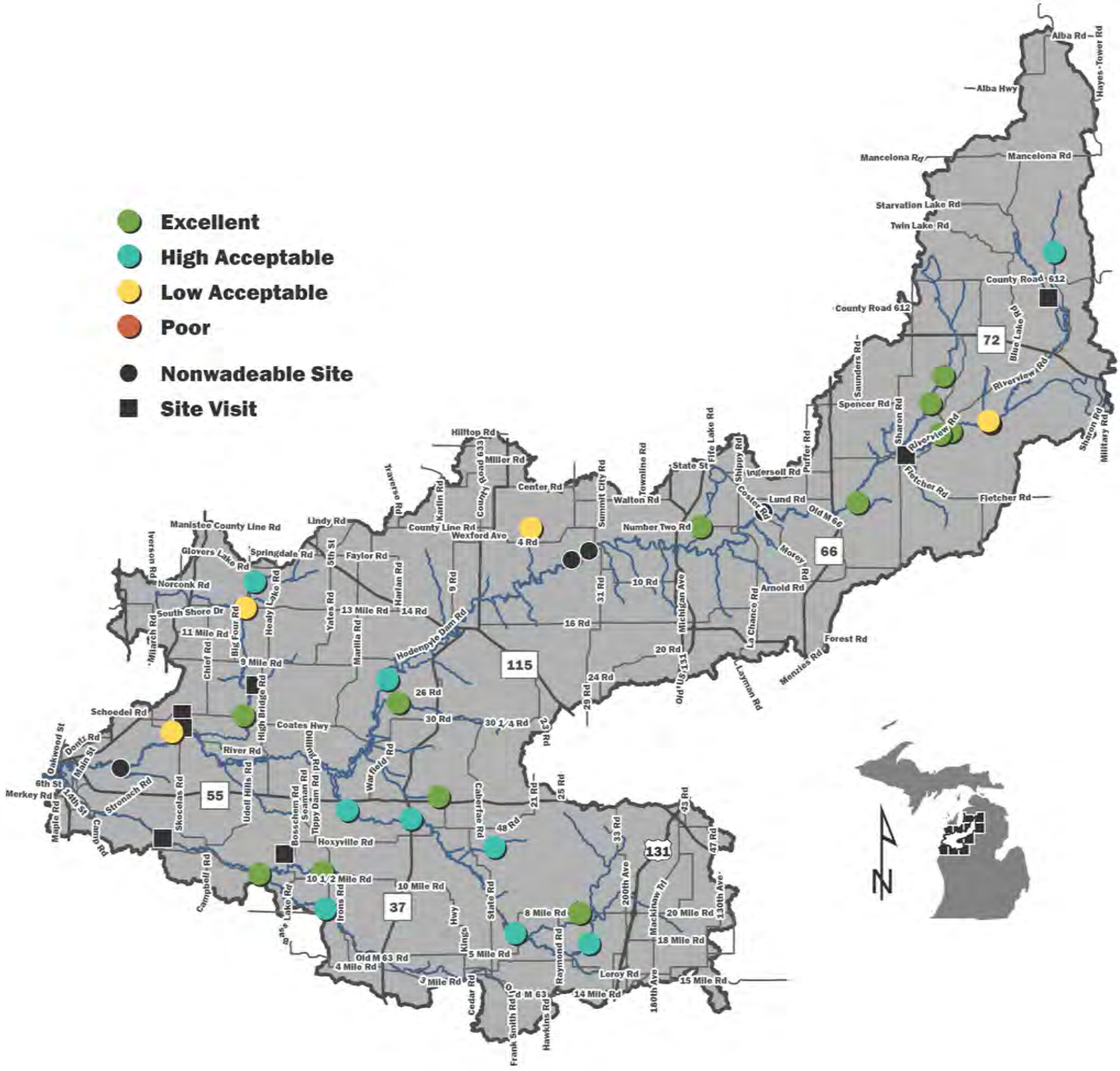
1/2017

This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.


Excellent
High Acceptable
Low Acceptable
Poor
Nonwadeable Site
Site Visit
Alba Rd
Alba Hwy
Hayes - Tower Rd
Mancelona Rd
Starvation Lake Rd
Twin Lake Rd
County Road 612
72
Blue Lake Rd
Riverview Rd
Saunders Rd
Spencer Rd
Sharon Rd
Fletcher Rd
Sinton Rd
Military Rd
Puffer Rd
Shippy Rd
Ingersoll Rd
State St
Fife Lake Rd
Townline Rd
Summit City Rd
Walton Rd
Lund Rd
Old M 66
Coster Rd
Number Two Rd
Arnold Rd
Morey Rd
66
La Chance Rd
Forest Rd
Menzies Rd
Laymon Rd
Old US 131
Michigan Ave
Hilltop Rd
Miller Rd
Center Rd
County Road 633
Traverse Rd
Karlin Rd
Lindy Rd
Manistee County Line Rd
County Line Rd
Wexford Ave
4 Rd
Springdale Rd
Glovers Lake Rd
Norconk Rd
Jocelson Rd
5th St
Faylor Rd
Harlan Rd
9 Rd
31 Rd
10 Rd
Lake Rd
Healy Lake Rd
Big Four Rd
South Shore Dr
Yates Rd
13 Mile Rd
14 Rd
16 Rd
Hodenpyle Dam Rd
Marlla Rd
Marth Rd
11 Mile Rd
Chief Rd
9 Mile Rd
115
20 Rd
24 Rd
29 Rd
26 Rd
30 Rd
30 1/4 Rd
High Bridge Rd
Schoedel Rd
Coates Hwy
Oakwood St
Dontz Rd
Main St
6th St
Merkey Rd
River Rd
Stronach Rd
Maple Rd
Skocelas Rd
55
Udell Hills Rd
Campbell Rd
Bosscheim Rd
Seaman Rd
Tippy Dam Rd
Old US 131
Warfield Rd
Caberfae Rd
21 Rd
25 Rd
43 Rd
49 Rd
33 Rd
47 Rd
Hoxyville Rd
131
10 1/2 Mile Rd
10 Mile Rd
37
Irons Rd
State Rd
Hwy
Kings
200th Ave
Mackinaw Rd
130th Ave
8 Mile Rd
20 Mile Rd
18 Mile Rd
5 Mile Rd
Old M 63 Rd
4 Mile Rd
3 Mile Rd
Raymond Rd
Leroy Rd
15 Mile Rd
14 Mile Rd
180th Ave
Cedar Rd
Frank Smith Rd
Old M 63
Hawkins Rd
N